



A Case Control Study on Clinical Characteristics and Outcome of Pneumonia Among Infants in Association with Conventional Child Rearing Practices

Dr Saranya Ravichandran^{1*}, Dr S. Priyanka², Dr Rangasamy Krishnamoorthy³,

¹*Professor, Department Of Pediatrics, Vinayaka Missions Kirupananda Variyar Medical College And Hospitals, Vinayaka Mission's Research Foundation (DU), Salem.

²Postgraduate, Department Of Pediatrics, Vinayaka Missions Kirupananda Variyar Medical College And Hospital, Vinayaka Mission's Research Foundation (DU), Salem.

³Professor And Hod, Department Of Pediatrics, Vinayaka Missions Kirupananda Variyar Medical College And Hospital, Vinayaka Mission's Research Foundation (DU), Salem.

*Corresponding Author-Dr Saranya Ravichandran

*Email:-Drsaranpaeds86@Gmail.Com

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KEYWORDS

ABSTRACT:

Background: The traditional child rearing practices pertaining to child care and cultural practices pertaining to mother care are being followed from one generation to another which has become part of our lives and being strictly followed. Certain practices tend to cause pneumonia among infants and children. Team approach concepts are necessary to educate mothers, paramedical and social workers upon the hazards of harmful traditional child rearing practices.

Materials and Methods: Our study is a prospective comparative study conducted in department of pediatrics at a tertiary care center. The study included all infants with clinical and radiological evidence of pneumonia in PICUs and wards who had a history of traditional child rearing practices were referred to as cases and infants with clinical and radiological evidence of pneumonia in PICUs and wards with no history of traditional child rearing practices were referred to as controls.

Result: About 100 newborns out of 300 had a history of conventional Child Rearing Practice. When all babies with pneumonia were analysed, 55% of infants were under 3 months, 33% between 4–6 months and 22% between 7–12 months. When the clinical parameters of pneumonia among the cases and controls were compared and analysed, it is discovered that: prolonged fever (82%), respiratory distress (>3) (70%), prolonged need for oxygen supplementation (70%), prolonged difficulty taking feeds (83%), extended IV fluid requirements (79%) and prolonged ICU care (87%) were shown to be related with pneumonia in children with traditional child rearing practices with statistically significant p value of <0.05 in cases.

Conclusion: This study shows that traditional childrearing practices are associated with longer durations of hospital stay with greater clinical severity and with complications of pneumonia. As a result, it is imperative to fully examine the advantages, disadvantages and possible hazards of many of the traditional childrearing methods applied to infants.

Introduction:

Long-standing practices and beliefs that are shared throughout a community and may be applied to a range of endeavours are called customs. Mother craft, child care customs and cultural traditions are passed down from generation to generation. Traditional practices are influenced by a variety of factors including: social status, educational achievement, family and society value systems. Numerous South Indian families tenaciously uphold their traditions and rituals in both rural and urban settings. There are several traditional ways of raising

children that are encouraged and practiced. When it comes to customs and traditions, even the educated and urban elites are not resistant to the influence of older women in their family and society(1). According to community data, there is a notable influence of diverse cultural practices on the causes of childhood illness and mortality. Oil going into the eyes and nose can lead to conjunctival inflammation, rhinorrhea, sneezing and pneumonia. The child who is weeping excessively may also aspirate water, bath products and secretions from their throat and nose.[2] After years of practice, the



elders and dhais in the households claim to be technically skilled in blowing into the nose to try and release the fluids within. The sudden rise in airway pressure can cause betel nut pieces or contaminated nasal or pharyngeal secretions to lodge in an infant's airways.[3] Some children may get pneumonia as a result of this bad child rearing practice. As time goes on, more severe issues like lipoid pneumonia—which is usually accompanied by bacterial sepsis—develop.[4] Pneumonia is an inflammation of the lung parenchyma. Although pneumonia is primarily caused by bacteria, there are a number of noninfectious variables that need to be considered from time to time. Among these non-infectious causes include aspiration of food or stomach acid, foreign objects, hydrocarbons and lipoid materials, hypersensitivity responses and pneumonias caused by radiation or drugs. In a typical child *S. pneumoniae*, *H. influenzae* type B, *S. pyogenes*, and *S.aureus* are the most frequent bacteria that cause pneumonia. The respiratory syncytial virus (RSV), parainfluenza, influenza, and adenoviruses are the most frequent viruses that cause pneumonias.[5,6] clinical symptoms of pneumonia include cough, fever with multisystem involvement and non specific symptoms including fever with chills, headache, malaise, irritability, restlessness and signs including tachypnoea, nasal flaring, suprasternal, subcostal and intercostal retractions, cyanosis similar complaints may be present among the other family members. Pneumonia also exhibits other features in common with septicemia and meningitis. [7,8] Certain parenting styles can be a major source of pneumonia. This study set out to assess the clinical profile and prognosis of pneumonia in infants reared using such traditional methods of childrearing.

Material and methodology:

It was a comparative prospective study carried out at a tertiary care hospital's paediatric department. Throughout the study period, all infants with pneumonia in the PICU and wards who were between the ages of 29 days and 1 year and who had a history of traditional child rearing practices were included in the study and

classified as cases. Conversely, infants in the same age group who were admitted and had both clinical and radiological evidence of pneumonia and no history of traditional child rearing practices were classified as the control group. Using simple random selection, 300 babies were clinically and radiologically diagnosed with pneumonia between October 2022 and October 2023. Of them, 100 were chosen as cases and 200 as control group. Those children in neonatal age group and those with systemic illnesses such as pulmonary, cardiac, renal, central nervous system, or metabolic issues that result in respiratory distress were excluded. A thorough clinical history was obtained for this study. Mothers and other care givers received questionnaires including information on a range of customary childrearing techniques such as oil baths, oil instillations into the nose, ears, and mouth, blowing into the nose, mouth-to-mouth suctioning, finger-mouth suctioning and administering native remedies. Clinical parameters which were assessed include the duration of the fever after admission, the duration of respiratory distress (defined as a Downe score >3)(8), the duration of difficulty taking regular feeds, the need for IV fluids, supplemental oxygen, ICU care, the need for any II line antibiotics and the clinical outcome. All necessary investigations were done. During admission, X-rays were examined for signs of consolidation, pyothorax, bronchopneumonia, patchy opacities, and pneumatoceles. The data was presented using numbers and percentages. Quantitative data was generated using the mean and SD. The SPSS version 24, was used for the chi square test and data analysis. The results were subjected to a qualitative T test, and a p-value of less than 0.05 indicated statistical significance between the two groups.

Results:

This study is comparative prospective study where about 100 cases and 200 control group were selected. The table-1 shows the distribution of study participants as per their age variation.

Age	Case (n%)	Controls (n%)
<3 months	55 (55%)	80 (40%)
4-7 months	23 (23%)	70(35%)
8-12 months	22 (22%)	50(25%)
Total	100 (100%)	200 (100%)

Table-1: Distribution of study participants as per their age

From the above table it shows about 55% of our study participants belong to <3months of age group, about 23% belong to 4-6 months of age group and about 22% belong to 7-12 months among cases. Among the controls about 40% belong to <3months of age group, about 25%

belong to 4-6months of age group and about 25% belong to 7-12 months of age group. While comparing the cases and control group with regarding to age, more number of study participants were less than 3 months when compared to other age groups.

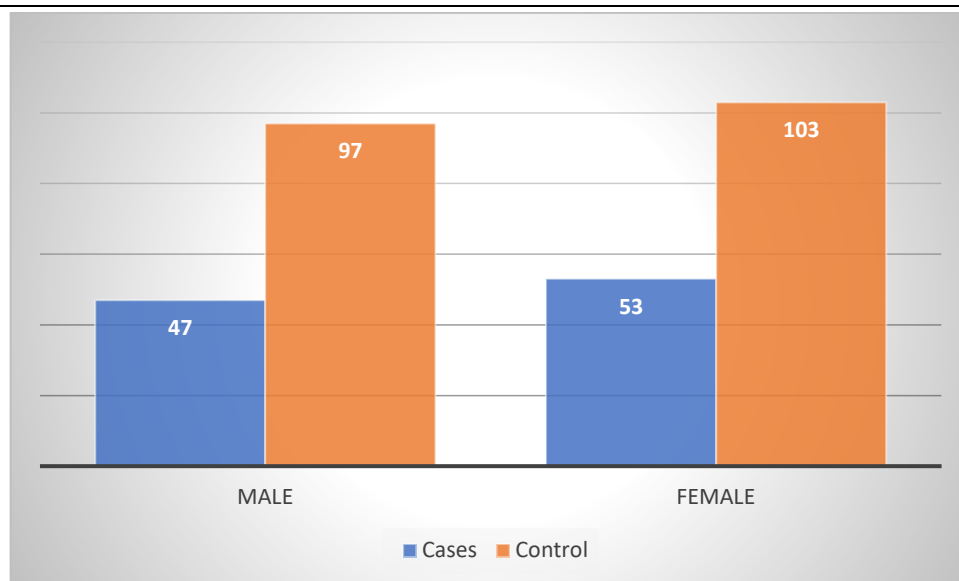


Figure-1: Distribution of study participants as per gender variation

From the above figure it is evident that distribution of study participants as per gender variation. Majority of

study participants were female child in both the cases and controls among our study participants.

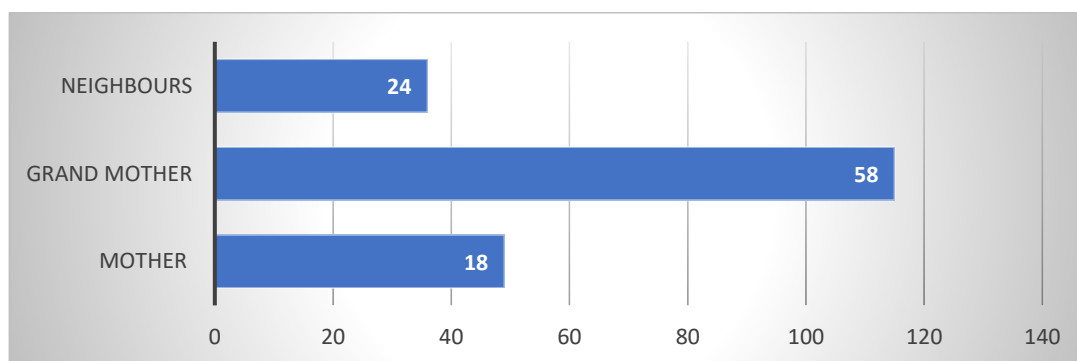


Figure-2: Persons who carried out or suggested child rearing practice

The above figure shows the distribution of study participants as per the persons who suggested or carried out the child rearing practice. Majority of child rearing

practices were suggested by their grandmother followed by the mother and finally by the neighbours among cases.

PARAMETER	CASE (N-100)	%	CONTROLS (N-200)	%	P VALUE
Fever					
Absent	12	12	16	8	0.023
<3 Days	6	6	147	73.5	
>3 days	82	82	37	18.5	
Feeding difficulty					
<3 Days	17	17	163	81.5	0.036
>3 days	83	83	37	18.5	
O2 supplementation					
<3 Days	30	30	143	71.5	0.038
>3 days	70	70	57	28.5	



Respiratory distress					
<3 Days	25	25	167	83.5	0.049
>3 days	75	75	33	16.5	
IV fluids given					
<3 Days	21	21	134	67	0.012
>3 days	79	79	66	33	
ICU care		0		0	
<3 Days	13	13	153	76.5	0.03
>3 days	87	87	47	23.5	
Complication					
Present	76	76	26	13	0.023
Absent	24	24	174	87	
Clinical outcome					
Improved	90	90	194	97	0.012
Death	10	10	6	3	

Table-2: Clinical profile and clinical outcome comparison between cases and control

The above table shows the comparison between clinical profile and its outcome between cases and controls. By comparing and analysing the clinical parameters of pneumonia among cases and control group, the following findings were found to be associated with pneumon in cases: prolonged fever (82%), prolonged respiratory distress >3 (75%), prolonged need for oxygen supplementation (80%), prolonged difficulty in taking feeds (83%), prolonged need for intravenous fluids (79%), prolonged ICU care and complications of pneumonia including empyema, sepsis, meningitis, pyothorax, patchy opacities, pneumatoceles with conventional CRP (76%). Newborns linked to conventional CRP were shown to be associated with a higher mortality rate (10%) than pneumonia in infants unrelated to traditional CRP (3%).

Discussion:

Traditional ways of childrearing are applied children who belong to early infancy regardless of the child's sex or location of residence, diseases like noisy breathing. Based on a case study of 264, research by Sudha Basnet et al [9] found that the most prevalent age group was between 2-36 months of age, which is relevant to the current study. The present study analysis is consistent with the study conducted by Kulkarni n et al [6] showed increased clinical severity, prolonged disease course and more complications of pneumonia in infants associated with traditional child rearing practices along with high mortality rate of 7.5%. The present analysis is consistent with a study by García-Elorriaga et al. [10] found that children under two years old in Mexico were the most common age group. If caregivers use conventional child care methods without having enough knowledge on how to care for a newborn, their baby could get hurt or

perhaps become disabled. Thus, mothers of infants and expectant mothers should be the target audience for educational communications. Cultural misconceptions impact baby care in the same way that they impact other aspects of human activity. Therefore, it is essential to look at cultural perspectives and newborn care methods [11,12]. Recurrent or chronic pneumonia affects boys twice as frequently as it does girls, according to a research by Balachandran et al. [13] that looked at 131 cases. The fact that male children receive preferential attention over female youngsters helped to explain this conclusion. When a baby is hospitalised with pneumonia, they usually have a fever, while smaller babies may have hypothermia.[14] In addition to dangerous infections, uncommon or drug-resistant bacteria can be the cause of a persistent fever that doesn't go away with therapy. when comparing to Gupta R et al [12] to the current study, claims that graduate moms are still affected by elders who are connected to quacks and religious individuals despite their educational position.[15] This is the first research of its sort to investigate whether traditional methods of raising children influence pneumonia. Although the focus of this study is on pneumonia, conventional parenting techniques have also been connected to a number of diseases in newborns and babies including those of the skin, gastrointestinal tract, and central nervous system.

CONCLUSION:

This study shows that traditional childrearing practices are associated with longer durations of hospital stay, greater clinical severity, increase in pneumonia complications among infants. Additionally, a high fatality rate of 10% was also noted. The two most common traditional child-rearing methods that affect a



baby's growth are blowing into the nose and oil bathing. As a result, it is imperative to fully examine the advantages, disadvantages and possible hazards of many of the traditional childrearing practices applied to neonates and infants. By examining various systems and integrating age groups like newborns and toddlers, we will be able to increase our understanding of the impact of traditional childrearing methods on developing children. Team approach concepts are necessary to educate mothers about various child-rearing practices and more paramedical and social workers should be educated upon the hazards of harmful traditional child rearing practices.

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